

## WEST Search History





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<input type="checkbox"/>	L1	\$azide.clm. same (agar or medium or slant or slants or innoculum or petri or dishes or dish or plates).clm.	291
<input type="checkbox"/>	L2	\$azide.clm. same (agar or medium or slant or slants or innoculum or petri or dishes or dish or plates or ghi or brucella or cdc or nutrient or schaedler or thiglycollate or trypticase or tsa or broth or agar).clm.	299
<input type="checkbox"/>	L3	L2 same (membranes or omp or fragments or oxygen or scavenging).clm.	5
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<input type="checkbox"/>	L7	L6.ti,ab,clm. same (agar or medium or slant or slants or innoculum or petri or dishes or dish or plates or ghi or brucella or cdc or nutrient or schaedler or thiglycollate or trypticase or tsa or broth).ti,ab,clm.	3261
<input type="checkbox"/>	L8	L7 and \$azide	27
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<input type="checkbox"/>	L11	L10 and (coli or escherichia or membranes or extract or extracted or extraction or outermembranes or omp)	21
<input type="checkbox"/>	L12	l4.clm.	1000
<input type="checkbox"/>	L13	L12 and coli.clm.	4
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L11: Entry 10 of 21

File: USPT

Nov 28, 2000

DOCUMENT-IDENTIFIER: US 6153400 A

TITLE: Device and method for microbial antibiotic susceptibility testing

Drawing Description Text (8):

FIGS. 7a and 7b are views of a susceptibility plate with E. coli, where FIG. 7a shows a raw image and FIG. 7b shows a processed image;

Detailed Description Text (19):

Results of susceptibility testing with system of the present invention are shown in FIGS. 7-9. FIG. 7a shows a grayscale image of E. coli on a susceptibility plate (using several different antibiotic disks) taken 18 hours after inoculation and antibiotic disk placement. FIG. 7b is the same plate image after image processing. The image taken at inoculation was subtracted from the image taken after 18 hours of incubation, the difference image was histogram equalized and blurred, and the zone measurement algorithm was applied to the resulting image. Inhibition zones and equivalent diameter measurements are shown in FIG. 7b. Similarly, FIGS. 8a and 8b show a grayscale image and processed image for S. aureus using the same timing and processing techniques as for FIG. 7.

Detailed Description Text (24):

The solid or semi-solid growth medium may comprise one or more of routine media, selective media, differential media, selective-differential media, enriched media, susceptibility media, anaerobic media and fungal media. If the media is routine media, it can comprise one or more of trypticase soy blood agar, trypticase soy agar, tryptic soy, BHI blood agar, BHI agar, Casman blood, HBT bi-layer media, and standard methods agar. If the media is selective media, it can comprise one or more of, columbia CNA blood, azide blood agar, chocolate selective, Brucella blood, blood SxT, Strep selective I & II, PEA, Bile Esculin agar, Clostridium difficile agar, skirrow, CCFA, CLED, Pseudomonas cepacia agar, SxT blood agar, TCBS agar, CIN, Moraxella catarrhalis media, and charcoal selective. If the media is differential media, it can comprise one or more of brilliant green, CYE--Legionella, centrimide, DNA-se, hektoen enteric agar, Jordans tartrate, mannitol salt, LIA, TSI, FLO--Pseudomonas F, TECH--Pseudomonas P, Sellers, starch agar, thermonuclease, Tinsdale agar, McCarthy, LSM, sorbitol-McConkey, MUG-McConkey.

## CLAIMS:

7. The method according to claim 1, wherein said solid or semi-solid growth medium comprises one or more of routine media, selective media, differential media, selective-differential media, enriched media, susceptibility media, anaerobic media and fungal media.

34. The method according to claim 7, wherein said selective media comprises one or more of, columbia CNA blood, azide blood agar, chocolate selective, Brucella blood, blood SxT, Strep selective I & II, PEA, Bile Esculin agar, Clostridium difficile agar, skirrow, CCFA, CLED, Pseudomonas cepacia agar, SxT blood agar, TCBS agar, CIN, Moraxella catarrhalis media, and charcoal selective.

38. The method according to claim 7, wherein said anaerobic media comprises one or more of columbia base, PEA, CAN, LKV, BBE, Brucella, BHI blood base, KBE, McClung-Toabe, oxgall, Schaedlers, and Wilkens-Chalgren.

DOCUMENT-IDENTIFIER: US 6153400 A

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FIGS. 7a and 7b are views of a susceptibility plate with *E. coli*, where FIG. 7a shows a raw image and FIG. 7b shows a processed image;

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Results of susceptibility testing with system of the present invention are shown in FIGS. 7-9. FIG. 7a shows a grayscale image of *E. coli* on a susceptibility plate (using several different antibiotic disks) taken 18 hours after inoculation and antibiotic disk placement. FIG. 7b is the same plate image after image processing. The image taken at inoculation was subtracted from the image taken after 18 hours of incubation, the difference image was histogram equalized and blurred, and the zone measurement algorithm was applied to the resulting image. Inhibition zones and equivalent diameter measurements are shown in FIG. 7b. Similarly, FIGS. 8a and 8b show a grayscale image and processed image for *S. aureus* using the same timing and processing techniques as for FIG. 7.

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CLAIMS:

7. The method according to claim 1, wherein said solid or semi-solid growth medium comprises one or more of routine media, selective media, differential media, selective-differential media, enriched media, susceptibility media, anaerobic media and fungal media.

34. The method according to claim 7, wherein said selective media comprises one or more of, columbia CNA blood, azide blood agar, chocolate selective, Brucella blood, blood SxT, Strep selective I & II, PEA, Bile Esculin agar, Clostridium difficile agar, skirrow, CCFA, CLED, Pseudomonas cepacia agar, SxT blood agar, TCBS agar, CIN, Moraxella catarrhalis media, and charcoal selective.

38. The method according to claim 7, wherein said anaerobic media comprises one or more of columbia base, PEA, CAN, LKV, BBE, Brucella, BHI blood base, KBE, McClung-Toabe, oxgall, Schaedlers, and Wilkens-Chalgren.

The microbial culture medium of claim 1, wherein the agar medium is selected from the group consisting of: A8 agar; Actinomycete Isolation Agar; Agar Medium No. F; American Trudeau Society medium; Anaerobic Agar; Azide Blood Agar Base; Bacillus cereus selective agar (BCA); Bacteroides Bile-Esculin agar; BG Sulfa Agar; Baird-Parker Agar Base; BIGGY Agar; Bile Esculin Agar Base; Bile Esculin Agar; Bile Esculin Azide Agar; Bismuth sulfite agar; Blood agar; anaerobic (CDC); Blood agar; anaer. W K & Val (CDC); Blood Agar Base; Blood Agar Base No. 2; Blood Agar, Laked, anaerobic with K & VA; Blood Agar, Phenylethyl alcohol, anaerobic; Bordet Gengou Agar Base; Brain Heart Infusion Agar; Brain Heart CC Agar; Brain Heart Infusion w/PAB and Agar; Brewer Anaerobic Agar; Brilliant Green Agar; Brilliant Green Agar Modified; Brilliant Green Bile Agar; Brucella Agar; Campylobacter Agar Base; Candida BCG Agar Base; Candida Isolation Agar; Cetrimide Agar Base; Charcoal Agar; Chocolate Agar; Clostridium difficile selective media; Columbia Blood Agar Base EH; Columbia Blood Agar Base; Columbia Blood Agar Base No. 2; Cooke Rose Bengal Agar; Corn Meal Agar; Cystine Heart Agar; Cystine Tryptic Agar; Czapek Solution Agar; DCLS Agar; D/E Neutralizing Agar; DNase Test Agar w/Methyl Green; DRBC Agar; Desoxycholate Agar; Desoxycholate Citrate Agar; Desoxycholate Lactose Agar; Dextrose Agar; Dextrose Starch Agar; Dextrose Tryptone Agar; Differential Reinforced Clostridial Agar; Dubos Oleic Agar Base; Egg Yolk Agar; M E Agar; Esculin Iron Agar; EMB Agar; Emerson YpSs Agar; Endo Agar; M Enterococcus Agar; Eugon Agar; M FC Agar; HC Agar Base; M HPC Agar; Heart Infusion Agar; Hektoen Enteric Agar; KF Streptococcus Agar; LPM Agar Base; Lactobacilli MRS Agar; Lethen Agar; Lima Bean Agar; Littman Oxgall Agar; Liver Infusion Agar; Liver Veal Agar; M 17 Agar; MYP Agar; MacConkey Agar; MacConkey Agar Base; MacConkey Agar CS; MacConkey Agar w/o Salt; MacConkey Agar w/o CV; MacConkey Sorbitol Agar; Malt Agar; Malt Extract Agar; Mannitol Salt Agar; McBride Listeria Agar; McClung Toabe Agar Base; Microbial Content Test Agar; Mueller-Hinton medium plain; Mueller-Hinton m. with 5% sheep B.; Mueller-Hinton m. chocolatized; Mycobacteria 7HI I Agar; Milk Agar; ;Mitis Salivarius Agar; Modified Lethen Agar; Mycobiotic Agar; Mycological Agar; Mycological Agar w/Low pH; Oatmeal Agar; Orange Serum Agar; PPLO Agar; Peptone Iron Agar; Phenylethanol Agar; Phenylalanine Agar; Potato Dextrose Agar; Protease No. 3 Agar; Pseudomonas Agar F; Pseudomonas Agar P; Pseudomonas Isolation Agar; Rice Extract Agar; Rose Bengal Agar Base; SABHI Agar Base; SPS Agar; Sabouraud Dextrose Agar; Salmonella-Shigella Agar; Sabouraud Maltose Agar; Simmons Citrate Agar; Spirit Blue Agar; TCBS Agar; M TEC Agar; TPEY Agar Base; Tellurite Glycine Agar; Thermoacidurans Agar; Thiosulfate citrate bile salts sucrose agar; Tomato Juice Agar; Tomato Juice Agar Special; Triple Sugar Iron Agar; Tryptic Soy Agar; Tryptone Glucose Extract Agar; Tryptose Agar; Tryptose Blood Agar Base; VJ Agar; Veal Infusion Agar; Veillonella Agar; Violet Red Bile Agar; Violet Red Bile Agar with MUG; Violet Red Bile Glucose Agar; XLD Agar; XLT4 Agar Base; YM Agar; Yeast Extract Glucose Chloramphenicol Agar; and Yersinia Selective Agar Base.

20030138867. 08 Nov 01. 24 Jul 03. Medium composition, method and device for selectively enhancing the isolation of anaerobic microorganisms contained in a mixed sample with facultative microorganisms. Copeland, James C., et al. 435/7.32; G01N033/554 G01N033/569 C12Q001/04.

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☐ 2. 20030104608. 09 Mar 93. 05 Jun 03. METHOD, COMPOSITION AND DEVICE FOR REMOVING OXYGEN FROM SOLUTIONS CONTAINING ALCOHOLS AND/OR ACIDS. COPELAND, JAMES C., et al. 435/262; C07C001/00.

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☐ 3. 20020045245. 19 Mar 01. 18 Apr 02. Apparatus and method for growing anaerobic microorganisms. Copeland, James C., et al. 435/305.3; 435/303.2 C12M001/22.

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☐ 4. 6429008. 19 Mar 01; 06 Aug 02. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/303.2; 422/102 435/305.4 435/307.1 435/801. C12M001/00 .

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☐ 5. 6204051. 28 May 99; 20 Mar 01. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/305.4; 435/288.3 435/303.2 435/801. C12M001/22 .

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☐ 7. 5830746. 04 May 94; 03 Nov 98. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/243; 435/303.2 435/305.4. C12M001/00 .

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☐ 9. 5432083. 19 Feb 93; 11 Jul 95. Enzymatic method for removing oxygen from oils and fats. Copeland; James C., et al. 435/271; 426/417 426/601 435/262 435/317.1. C12S003/00 C11C001/00 C12N001/00 A23L003/3463 .

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☐ 10. 5240853. 07 Mar 89; 31 Aug 93. Apparatus and method for continuously removing oxygen from fluid streams using bacterial membranes. Copeland; James C., et al. 435/262; 435/820. C12N011/18 .

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☐ 11. 4996073. 29 Aug 89; 26 Feb 91. Method and composition for removing oxygen from solutions containing alcohols and/or acids. Copeland; James C., et al. 426/487; 426/541 426/544 426/592 435/161 435/262 435/264 435/801 435/820. C12G001/00 C12H001/00 .

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☐ 12. US20030138867A. Medium composition for selective enhancement of anaerobes from a mixed sample with facultative microorganisms, comprises a nutrient medium and a salt of azide. COPELAND, J C, et al. C12Q001/04 G01N033/554 G01N033/569.

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☐ 13. US20030104608A. Use of oxygen scavenging membrane fragments to remove oxygen from alcoholic solution or acidic solution e.g. beer, fruit juices. ADLER, H I, et al. C07C001/00.

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☐ 14: US 5432083A. Removing oxygen from oils and fats, useful as antioxidant for e.g. food - by adding aq. soln. contg. oxygen-scavenging membrane fragments and hydrogen donor to oil contg. oxygen. ADLER, H I, et al. A23L003/3463 C11C001/00 C12N001/00 C12S003/00.

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☐ 15. US 5362501A. Removal of oxygen from acidic solns. opt. contg. alcohols - using isolated

oxygen=scavenging membrane fragments from Acetobacter sp., and a hydrogen donating cpd.. ADLER, H I, et al. A23B007/10 A23K001/00 A23L001/236.

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☐ 17: EP 427813B. Continuous removal of oxygen from fluids - by passage over immobilised oxygen scavenging cell membrane fragments. ADLER, H I, et al. C02F003/00 C02F003/34 C12M001/40 C12N011/18.

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- ☐ 1. 20030138867. 08 Nov 01. 24 Jul 03. Medium composition, method and device for selectively enhancing the isolation of anaerobic microorganisms contained in a mixed sample with facultative microorganisms. Copeland, James C., et al. 435/7.32; G01N033/554 G01N033/569 C12Q001/04.
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- ☐ 2. 20030104608. 09 Mar 93. 05 Jun 03. METHOD, COMPOSITION AND DEVICE FOR REMOVING OXYGEN FROM SOLUTIONS CONTAINING ALCOHOLS AND/OR ACIDS. COPELAND, JAMES C., et al. 435/262; C07C001/00.
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- ☐ 3. 5432083. 19 Feb 93; 11 Jul 95. Enzymatic method for removing oxygen from oils and fats. Copeland; James C., et al. 435/271; 426/417 426/601 435/262 435/317.1. C12S003/00 C11C001/00 C12N001/00 A23L003/3463 .
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- ☐ 4. 4996073. 29 Aug 89; 26 Feb 91. Method and composition for removing oxygen from solutions containing alcohols and/or acids. Copeland; James C., et al. 426/487; 426/541 426/544 426/592 435/161 435/262 435/264 435/801 435/820. C12G001/00 C12H001/00 .
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4. 6429008. 19 Mar 01; 06 Aug 02. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/303.2; 422/102 435/305.4 435/307.1 435/801. C12M001/00 .
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5. 6204051. 28 May 99; 20 Mar 01. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/305.4; 435/288.3 435/303.2 435/801. C12M001/22 .
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6. 5955344. 03 Nov 97; 21 Sep 99. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/243; 435/288.3 435/303.2 435/305.4 435/307.1 435/395 435/420 435/801. C12N001/00 .
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7. 5830746. 04 May 94; 03 Nov 98. Apparatus and method for growing anaerobic microorganisms. Copeland; James C., et al. 435/243; 435/303.2 435/305.4. C12M001/00 .
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8. 5482860. 20 Apr 93; 09 Jan 96. Apparatus for continuously removing oxygen from fluid streams. Copeland; James C., et al. 435/293.1; 435/297.1 435/813. C12M001/40 .

5432083

4996073 *Kevin*

oxygenase  
oxygen-scavenger  
oxygenase  
oxygenase

EC oxygenase



DOCUMENT-IDENTIFIER: US 4996073 A

TITLE: Method and composition for removing oxygen from solutions containing alcohols and/or acids

CLAIMS:

1. A method for removing oxygen from a food stuff or beverage solution containing alcohol comprising the steps of:

(a) providing a food stuff or beverage solution containing alcohol; and,

(b) adding to the solution a sufficient amount of oxygen scavenging membrane fragments to reduce the oxygen present in the solution to water.

4. The method of claim 1, wherein oxygen scavenging membrane fragments contain an electron transport system which reduces oxygen to water in solutions containing alcohol.

5. The method of claim 1, wherein said oxygen scavenging membrane fragments are derived from bacteria, yeast, fungi, plants and animals selected from the group consisting of beef heart, potato tubers, spinach, Saccharomycetes, Neurospora, Aspergillus, Euglena, Acetobacter, Chlamydomonas, Escherichia, Bacillus, Salmonella, Gluconobacter, and Pseudomonas.

6. The method of claim 1, wherein said oxygen scavenging membrane fragments are cell membrane fragments derived from the organism Escherichia coli.

13. The method of claim 1, further comprising the step of adjusting the pH of the alcohol solution to a pH of about 6 to about 9 prior to the addition of the oxygen scavenging membrane fragments.

14. A method for removing oxygen from an acidic alcohol food stuff or beverage solution comprising the steps of:

(a) providing an acidic alcohol food stuff or beverage solution containing oxygen; and

(b) adding to the solution a sufficient amount of oxygen scavenging cell membrane fragments from an organism of the genus Acetobacter to reduce the oxygen present in the solution to water.